I. Amendments

A. In the Claims

This listing of claims replaces all prior versions and listings of claims in the application. Please amend claims 1, 9 and 16, and cancel claims 4, 5 and 17, as follows:

Listing of the Claims

1. (currently amended) A color component color sensing circuit, comprising:

a color sensor circuit comprising a first photodetector configured to receive incident light falling thereon, and to provide, in response to the incident light falling thereon, a first light photocurrent therefrom as a first output voltage, the first output voltage corresponding to an intensity of one of a Red, Green and Blue color component of the incident light as such intensity occurs under current operating temperatures;

a dark color sensor circuit comprising a second photodetector configured to detect and provide a dark second photocurrent proportional to said current operating temperatures and output a second output voltage corresponding to an offset voltage generated by said dark second photocurrent under said current operating temperatures; and

a differential amplifier circuit operably coupled to said color sensor circuit and to said dark color sensor circuit, said differential amplifier being configured to receive said first and second output voltages, remove, using said second output voltage, said dark color offset voltage from said first output voltage, and thereby provide a dark color offset voltage and current operating temperature

compensated output signal to a differential output thereof representative of said intensity of said color component, said differential amplifier circuit further comprising a difference amplifier configured to provide said compensated output signal to said differential output and further comprising a positive input and a negative input, a feedback resistor having a resistor value with one end coupled to said negative input and another end coupled to said differential output, a first resistor having said resistor value coupled in series with a color sensor output configured to provide said first output voltage and said negative input, a second resistor having said resistor value coupled in series with a dark sensor output of said dark sensor circuit configured to provide said second output voltage and said positive voltage, and a third resistor having said resistor value coupled in series to said positive input and to ground, said resistor value approximating a resistance of the feedback resistor in said color sensor circuit.

2. (previously presented) The color sensing circuit of claim 1, wherein said color sensor circuit further comprises:

a transimpedance amplifier including an output configured to provide said first output voltage, a negative input, and a positive input;

a feedback resistor with one end coupled to said output and another end coupled to said negative input; and

a compensation capacitor coupled in parallel with said feedback resistor to said output and said negative input;

wherein the first photodetector is configured to provide said first light photocurrent corresponding to said color component, and further comprises a first photodetector input coupled to ground and to said positive input, and a first photodetector output coupled to said negative input.

3. (previously presented) The color sensing circuit of claim 1, wherein said dark color sensor circuit further comprises:

a transimpedance amplifier including an output configured to provide said second output voltage, a negative input, and a positive input;

a feedback resistor with one end coupled to said output and another end coupled to said negative input; and

a compensation capacitor coupled in parallel with said feedback resistor to said output and said negative input;

wherein the second photodetector is configured to provide said dark second photocurrent corresponding to said dark current, and further comprises a second photodetector input coupled to ground and to said positive input, and a second photodetector output coupled to said negative input.

4. (cancelled)

5. (cancelled)

6. (previously presented) The color sensing circuit of claim 1, wherein said color component comprises red.

7. (previously presented) The color sensing circuit of claim 1, wherein said color component comprises green.

8. (previously presented) The color sensing circuit of claim 1, wherein said color component comprises blue.

9. (currently amended) A color sensing circuit configured to sense a plurality of color components of light incident thereon, comprising:

a plurality of Red, Green and Blue color sensor circuits, each color sensor circuit comprising a first photodetector and being configured to receive incident light falling thereon, and to provide, in response to the incident light falling thereon, a first light photocurrent therefrom as a first output voltage, the first output voltage corresponding to an intensity of one of a Red, Green and Blue color component of the incident light as such intensity occurs under current operating temperatures;

a dark color sensor circuit comprising a second photodetector configured to provide a dark second photocurrent proportional to said current operating temperatures and output a second voltage corresponding to an offset voltage generated by said dark second photocurrent under said current operating conditions, and

at least one differential amplifier circuit operably coupled to said plurality of color sensor circuits and to said dark color sensor circuit and being configured to receive said first and second output voltages, remove, using said second output voltage, said dark color offset voltage from each of said first output voltages, and provide dark color offset voltage and current operating temperature compensated output signals corresponding to each of said color components to at least one differential output thereof, each of said output signals representing said intensity of said color component corresponding thereto, said differential amplifier circuit further comprising a difference amplifier configured to provide said compensated output signal to said differential output and further comprising a positive input and a negative input, a feedback resistor having a resistor value with one end coupled to said negative input and another end coupled to said differential output, a first resistor having said resistor value coupled in series with a color sensor output configured to provide said first output voltage and said negative input, a second resistor having said resistor value coupled in series with a dark sensor output of said dark sensor circuit configured to provide said second output

voltage and said positive voltage, and a third resistor having said resistor value coupled in series to said positive input and to ground, said resistor value approximating a resistance of the feedback resistor in said color sensor circuit.

10. (previously presented) The color sensing circuit of claim 9, wherein said at least one differential amplifier circuit further comprises:

a positive input and a negative input;

a feedback resistor having a resistor value with one end coupled to said negative input and another end coupled to said positive input, wherein said resistor value approximates a resistance of the feedback resistor included in at least one of said color sensor circuits;

a first resistor having said resistor value coupled in series with said negative input and at least one output of said color sensor circuits;

a second resistor having said resistor value coupled in series said positive voltage and with a dark sensor circuit output; and

a third resistor coupled in series to said positive input and to ground.

11. (previously presented) The color sensing circuit of claim 9, wherein each of said plurality of color sensor circuits further comprises:

a transimpedance amplifier including an output configured to provide said first output voltage, a negative input, and a positive input;

a feedback resistor with one end coupled to said output and another end coupled to said negative input; and

a compensation capacitor coupled in parallel with said feedback resistor to said output and said negative input;

wherein the first photodetector is configured to provide said first photocurrent corresponding to said color component, and further comprises a

first photodetector input coupled to ground and to said positive input, and a first photodetector output coupled to said negative input.

12. (previously presented) The color sensing circuit of claim 9, wherein said dark color sensor circuit further comprises:

a transimpedance amplifier including an output configured to provide said second output voltage, a negative input, and a positive input;

a feedback resistor with one end coupled to said output and another end coupled to said negative input;

a compensation capacitor coupled in parallel with said feedback resistor to said output and said negative input;

wherein the second photodetector is configured to provide said dark second photocurrent corresponding to said dark current, and further comprises a second photodetector input coupled to ground and to said positive input, and a second photodetector output coupled to said negative input.

13. (previously presented) The color sensing circuit of claim 9, wherein said color component comprises red.

14. (previously presented) The color sensing circuit of claim 9, wherein said color component comprises green.

15. (previously presented) The color sensing circuit of claim 9, wherein said color component comprises blue.

16. (currently amended) A method of compensating for dark current fluctuations proportional to current operating temperature variations in a color component color sensing circuit, comprising:

measuring, under current operating temperatures, a first voltage associated with a first intensity of a first color component of a first light input incident on a first light photodetector;

measuring, under said current operating temperatures, an offset voltage associated with a dark photocurrent provided by a dark second photodetector; ~~and~~

subtracting said offset voltage from said first voltage thereby to provide a dark color offset voltage and current operating temperature compensated first final output signal representative of said first intensity of said first color component, and

matching a resistor value for resistors in a differential amplifier circuit to a resistance of a feedback resistor in a circuit configured to measure said first voltage, wherein said differential amplifier circuit is configured to receive said first voltage and said offset voltage and outputs therefrom said final output signal.

17. (cancelled)

18. (previously presented) The method of claim 16, further comprising:

measuring, under said current operating temperatures, a second voltage associated with a second intensity of a second color component of a second light input incident on a third photodetector; and

subtracting said offset voltage from said first voltage and said second voltage thereby to provide dark color offset voltage and current operating temperature compensated second final output signal representative of the second intensity of said second color component.

19. (previously presented) The method of claim 16, wherein said first color component comprises red.

20. (previously presented) The method of claim 16, wherein said first color component comprises green.

21. (previously presented) The method of claim 16, wherein said first color component comprises blue.